

# A DOCUMENT INSPECTION METHOD FOR AUTO FEEDING DEVICE

## 1. Field of the Invention

[0001] The present invention relates to a document inspection method for auto feeding device, especially focusing on the QC process of auto feeding device to inspect the variable conditions of paper feeding motions.

## 2. Background of the Invention

[0002] The world is going better and better, thus the first priority for everything is efficiency, economization and precision. On the other hand, when the worldwide economy goes down and it is happened all the time, labor fee is the huge fixed outgoing for any company monthly. Therefore, no matter hardware or software is created to be instead of human resource for decreasing the fixed outgoing. Moreover, those highly intellective products, hardware and software, can work continuously without rest, emotion and mistake, and this is the object what the present world needs. The invention is created based on the above situation.

[0003] Up to now, there are many detail procedures in QC process that need to be inspected by human being in companies, because some detail procedures cannot be executed by hardware. In the producing field of scanning devices, such as scanner and the accessory products, are still inspected in QC process by labor. For instance, the auto feeding device, which is checked by a man to watch the conditions of papers feeding into scanning device through auto feeding device. Many conditions for that, such as multiple papers in one feeding process, paper jam, paper inclined, etc. Thus, the process for a man to watch is very important, otherwise, product quality and reputation are affected, further, the cost for post services is double or even more, and the result is almost not compensated.

## SUMMARY OF THE INVENTION

[0004] The major object of the present invention is to use the bar code printed on standard inspection paper for identifying the paper feeding condition, which is a single one or multiple papers. The bar codes on the standard inspection papers are continuous, thus, in case of the bar codes are

not continuous, it means that the condition, multiple papers are fed in one time, was happened.

[0005] The second object of the present invention is to use the bar code printed on standard inspection paper to identify the paper jam is taken place or not. The bar codes on the standard inspection papers are continuous, thus, in case of the bar codes are not continuous, it means that the condition, paper jam, is happened.

[0006] The third object of the present invention is to use the bar code printed on standard inspection paper to identify the layout of the paper fed into scanner is inclined or not. The position of the bar code on the standard inspection paper is same as each one, therefore, a scanned image is recorded after scanning, and the recorded image is compared with standard position file, the condition, inclined paper, is recognized after comparing.

[0007] The fourth object of the present invention is to use the bar code printed on standard inspection paper to know which paper the problem is. The bar codes are continuous, for example, numerical combination, and in case of problem happened, the problem paper is known soon.

[0008] The fifth object of the present invention is to use the bar code printed on standard inspection paper to count how many pieces of papers are fed into scanner for inspecting auto feeding device. A QC standard is formulated, and it means a certain amount of papers are fed into scanner by auto feeding device without problems, the inspected auto-feeding device is passed. Also, the inspection is stop immediately and next one is started inspecting. Thus, standard inspection papers are not consumed and the inspecting schedule is precisely controlled.

[0009] To describe more clearly about a structure improvement of adjustable interval of a display frame of the present invention, a detailed explanation in accordance with several diagrams are as following:

### **BRIEF DESCRIPTION OF THE DRAWINGS**

[0010] Figure 1 is the standard inspection paper of the present invention.

[0011] Figure 2 is the auto-feeding device of the prior art.

[0012] Fig. 3 is the inspection flow of the present invention.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

[0013] The present invention is a document inspection method for auto feeding device, and it uses a pattern printed on a standard inspection paper with the feature of uniqueness and continuous. Generally speaking, the pattern takes the type of bar code. When scanning, a reading unit in scanning device reads an image of a bar code and records the image to a recording device, thus, the image is compared with a standard image in the recording device or a computer to recognize the functions of paper feeding, paper positioning, etc. for a auto feeding device.

[0014] Please refer to figure 1, which is the standard inspection paper of the present invention. Wherein, there are at least two identical bar codes on standard inspection paper 1, and the two bar codes 6 are distributed symmetrically on the top of the standard inspection paper 1. When the standard inspection paper 1 feeding into a scanner for inspection scanning, the two bar codes 6 are the first priority to be scanned for inspection. Bar code 6 represents two meanings: the first is that it is with the feature of uniqueness, and the first feature helps to immediately recognize what the problem is happened within the process of the standard inspection paper 1 feeding into scanner via auto feeding device; for a preferred embodiment, the bar code is a serial number, which not only represents the special standard inspection paper with each serial number, but also the count function because the serial number is continuous; the second, the bar codes 6 are on fixed positions of the standard inspection paper 1, thus, the situation that the standard inspection paper 1 is inclined or not is known after laying out the standard inspection paper 1 on scanner.

[0015] Please refer to figure 2 and figure 3, which are the auto-feeding device of the prior art and the inspection flow of the present invention. For further understanding, please take figure 2 and figure 3 as references. The following is the steps of the invention:

[0016] step 1: having auto feeding device 3 on a working position of

scanning device 2, and starting the auto feeding device 3;

[0017] step 2: a state of auto feeding is starting, which means the auto feeding device 3 feeds the standard inspection paper 1 with bar codes 6 to a working position of scanner 2;

[0018] step 3: the scanner 2 scans the standard inspection paper 1;

[0019] step 4: a reading unit 4 in the scanner 2 reads the bar codes 6 on the standard inspection paper 1, and a recording device 5 records the conditions while the bar codes 6 are scanned by scanner 2; the happened conditions may be any of the following: the first, multiple standard inspection papers 1 are fed into scanner 2 in one time, because auto feeding device 3 cannot grab a piece of paper or sticking force of papers is too tight, thus the different bar codes 6 on different papers are not continuous and it means that problem is happened; the second, standard inspection paper 1 is jammed somewhere between scanner 2 and auto feeding device 3, and even the reading unit 4 is driven to read bar codes 6, it is possible that the images of bar codes 6 are not completely caught up or missed; the third, in case of not fully reading the images or wholly missing the images, therefore standard inspection paper 1 is probably inclined when laying out on scanner 2; the fourth, a number, the happened problem paper number, is variable because problem happened randomly, thus any paper happened problem can be known immediately;

[0020] step 5: the inspection for the single standard inspection paper is finished, if there are still some standard inspection papers in auto feeding device 3, then going back to step 2, otherwise, going to next step;

[0021] step 6: the whole process is done.

[0022] As a conclusion of the above mention, the present invention only uses bar codes printed on standard inspection paper to inspect variable conditions when auto feeding device in QC process. Comparing with the inspection of human resource in prior art, the present invention truly

overcomes that and totally conforms to the spirits of invention.

- 5 [0023] However, the above-mentioned statement is only a preferable embodiment of the present invention and cannot be taken as the restrictive scope of the present invention. All the variation and amendment from the claims of this patent application of the present invention will possess the meaning of the present invention and will be within the spirit and field of the present invention, so they will be viewed as the situation of further execution of the present invention.